Date: Wed, 8 Dec 93 04:30:14 PST

From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>

Errors-To: Ham-Ant-Errors@UCSD.Edu

Reply-To: Ham-Ant@UCSD.Edu

Precedence: Bulk

Subject: Ham-Ant Digest V93 #136

To: Ham-Ant

Ham-Ant Digest Wed, 8 Dec 93 Volume 93 : Issue 136

Today's Topics:

9913, N Connectors and Water Tight Seal
First antenna for 160 meters

First antenna for 160 meters(continuously loaded???)

GAP DX-VI Antenna
How do you couple to a "Quad" ? (3 msgs)

Rugged 2 meter antenn
Setting up a HY-GAIN vertical.

Yagi question

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu> Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu> Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available (by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text herein consists of personal comments and does not represent the official policies or positions of any party. Your mileage may vary. So there.

Date: Mon, 6 Dec 1993 19:03:36 GMT

From: nih-csl!helix.nih.gov!mack@uunet.uu.net Subject: 9913, N Connectors and Water Tight Seal

To: ham-ant@ucsd.edu

In article <seeler.63.0@UPEI.CA> seeler@UPEI.CA (David Seeler) writes: >Earlier this year a question arose as to how to dry out 9913 in which >water had apparently been able to enter the cable at the junction >with the antenna. A number of responses were made as to how to seal >the joint at that time and it seems that I have lost the information. > >From memory I recollect the following:

>

>1. Use N connectors and install them PROPERLY!

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>2. Before putting the connector on the cable - seal the cable with a non-
    conductive, noncorrosive compound.
>3. Use a combination of Scotch Kote and quality tape layers to seal the
    joint after the connector is placed and attached to the antenna.
>
    Mentioned were 23, 33 and 88 brands of tape I believe.
>Is this correct?
>If so - suggestions as to the compound used to seal the 9913 before placing
>the N Connector? Also - since my cable is on order ( none on the island )
>suggestions as to how to do this without harming the cable - or is the
>air channel that large?
>Which of the tapes mentioned above is better - or is it a matter of what you
>can get your hands on?
>Instead of Scotch Kote others had mentioned other compounds - suggestions
>anyone? Can coax-seal with proper tape and taping job work?
>
>Your comments and suggestions would be GREATLY appreciated. This cable will
>be used for the 440 MHz run ( and the last part of the setup ) for a
>digital satellite station and I would like it to last for a while :-).
>
>
>73 for now - David Seeler, VY2DCS
>Internet: SEELER@UPEI.CA
Date: Mon, 6 Dec 1993 03:43:41 GMT
From: agate!iat.holonet.net!rohrwerk@ames.arpa
Subject: First antenna for 160 meters
To: ham-ant@ucsd.edu
n4hy@tang.ccr-p.ida.org (Bob McGwier) writes:
>I am a 160 meter operator at N2RM and that is a site that uses inverted
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>I am a 160 meter operator at N2RM and that is a site that uses inverted >L's. They perform brilliantly and have a nice low angle of radiation. >You do definitely want the performance enchancement you will get from the >vertical portion for the skywave coming in on 160. HOWEVER, the antenna >will be CRAP if you cannot lay out a bundle, and I do mean a bundle of >radials. If you do not have room for quarter wave radials, 30-50 of them, >go with the inverted vee.

General agreement here. However, you may get good performance with fewer radials (much more than three, however!) of shorter length. See the ARRL Antenna Book, page 3-13, for a nice chart of optimum length/number tradeoffs. For example, for 36 radials, they can be 0.15 wavelength, for a low-angle power loss of only 1.5 dB. For 24 radials, they recomment 0.125 wavelength, yielding power loss of 2 dB.

John KOJD

Date: 8 Dec 93 02:27:29 GMT

From: ogicse!cs.uoregon.edu!sgiblab!sdd.hp.com!col.hp.com!srgenprp!

alanb@network.ucsd.edu

Subject: First antenna for 160 meters(continuously loaded???)

To: ham-ant@ucsd.edu

Salonen Jukka (jps@cs.tut.fi) wrote:

- : In article <Dec02.203026.84765@yuma.ACNS.ColoState.EDU> galen@picea.CFNR.ColoState.EDU (Galen Watts) writes:
- : >I've thought about a continuously loaded (read: slinky style) vertical
- : >or possibly a cont loaded dipole for 160. The dipole version could
- : >be made small enough to rotate! Has anyone done something like this
- : >beyond the sparse articles in ARRL literature????
- : I am not expert on this but IMHO you can put normal dipole/inv vee(if
- : you have enough space for it) because if you cant put it high enough,
- : the radiation diagram for dipole remains a potatoe ;).

^^^^

(Jukka spells like our former Vice President! :=)

I agree that antenna efficiency is more important than dirrectivity for 160 meter transmitting antennas. As Jukka says, a dipole at any reasonable height on this band will be pretty much omni-directional.

For RECEIVING antennas, just the opposite is true. Efficiency is not important, but directivity is. A good combination would be a vertical or dipole as tall/high as you can get for transmitting. And a tuned, shielded loop antenna for receiving, between one and a few meters in diameter. That way you get the good efficiency for transmitting and good directivity (and also out-of-band interference rejection) for receiving.

 	 	 _	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_

Date: 6 Dec 93 22:52:05 GMT

From: usc!howland.reston.ans.net!cs.utexas.edu!swrinde!dptspd!ephsa!

lou@network.ucsd.edu

Subject: GAP DX-VI Antenna

To: ham-ant@ucsd.edu

John -

I have been using a GAP EAGLE DX-VI for a couple of years, and am quite happy with it. Easy set-up, minimal tuning, good stability, -NO RADIALS- (I don't count the counterpoise as a radial system). My first "bounce" seems to be about 1800 miles. Have worked DX with Australia, New Zealand, Great Britain, Italy & Germany.

73 Lou

Packet & TCP/IP: Internet:

N5SGL @ K3WGF.#SAT.TX.USA.NOAM Louis_Genco@fcircus.sat.tx.us

n5sgl@sat.ampr.org lou@ephsa.sat.tx.us

- -

lou@ephsa.sat.tx.us (Lou Genco) Rivercity Matrix -- +1 (210) 561-9815/21 -- San Antonio, Texas

Date: Tue, 07 Dec 1993 15:21:07 GMT

From: yuma!galen@purdue.edu

Subject: How do you couple to a "Quad" ?

To: ham-ant@ucsd.edu

In article <2e0fkh\$r71@agate.berkeley.edu> ron@etch-eshop.Berkeley.EDU (Ronald Viegelahn) writes:

> Hello

> I have a question about a " Quad " antenna. What method of >coupling is usually used ?

> My old 1978 handbook shows it being driven off the end of >75 ohm coax, with a formula of L = 251 over f in Mhz. L being >the distance to the transitter.

>I'm a little confused.

>ron@etcheshop.Berkeley.EDU

I have a 3 ele 2m quad, and I use a 1/4 wavelength section of RG-6 (70 some ohms) as a matching section. SWR is lower than 1.5:1 across the FM portion of 2m. You need to correct for velocity factor. See the ARRL handbook or Antenna book for details. Galen, KF0YJ

Date: 7 Dec 93 15:51:07 GMT

From: ogicse!henson!netnews.nwnet.net!raven.alaska.edu!acad2.alaska.edu!

auchd@network.ucsd.edu

Subject: How do you couple to a "Quad" ?

To: ham-ant@ucsd.edu

In article <2e0fkh\$r71@agate.berkeley.edu>, ron@etch-eshop.Berkeley.EDU (Ronald Viegelahn) writes:

> > I have a

> Hello

 $\hspace{0.1cm}>\hspace{0.1cm}$ I have a question about a " Quad " antenna. What method of

> coupling is usually used ?

>

> My old 1978 handbook shows it being driven off the end of > 75 ohm coax, with a formula of L = 251 over f in Mhz. L being

> the distance to the transitter.

> I'm a little confused.

> >

ron@etcheshop.Berkeley.EDU

>

A one wavelength quad exhibits a resistance of 100 ohms at the feed. The traditional way to feed it is to use a 1/4 wavelength matching section of 75 ohm cable connected at the feed of the antenna, then coupled to 50 ohm cable which runs to the rig. This matches the 100 ohms of the antenna to the 50 ohm balance of the input on the rig.

For multiband operation you can feed the quad with balanced line (450 or 300 ohm), run it to a transmatch. I'm going to give the multiband option a try. I know the 1/4 wavelength matching method works pretty good.

James M. Wiedle WL7NO

Date: Tue, 7 Dec 1993 18:18:39 GMT

From: spsgate!mogate!newsgate!slick!smitht@uunet.uu.net

Subject: How do you couple to a "Quad" ?

To: ham-ant@ucsd.edu

Typically a quad exhibits an impedance of 120 to 200 ohms. The 1/4 wavelength of 75ohm co-ax is a cheap way to match the 120/200 ohms.

I use 4:1 current baluns on my 40m/30m/20m/17m/15m quad loops with SWR 1:1 at center freq.

bandwidth for 1.5 swr is 300-500khz depending on band.

not a cheap solution but quicker than trimming 75 ohm co-ax with my noise bridge.

Trevor G3WQO/AB5EU still exiled in Texas.....

Date: Mon, 06 Dec 1993 23:39:56 -0500

From: usc!howland.reston.ans.net!spool.mu.edu!think.com!spdcc!merk!

harvee.billerica.ma.us!esj@network.ucsd.edu

Subject: Rugged 2 meter antenn

To: ham-ant@ucsd.edu

In <931204075944230@pubcon.fort-worth.tx.us>, BRIAN OAKLEY writes: >anyone ever uses a mag mount 5/8 wave 2 meter whip stuck on a bike book >rack? looks like this would work ok. i have not tried this yet but >seems a simple way to put an antenna on a bicycle. 73 wb5kxw

A friend of mine uses a 5/8 wave whip on his bike but he needs a counter-poise to get the swr down. I use a 1/2 wave antenna on my recumbent and it works rather well.

--- eric

- -

HOME: esj@harvee.billerica.ma.us HAM ka1eec WORK: esj@temerity.polaroid.com 617.386.4687

source of the public's fear of the unknown since 1956

Date: 8 Dec 93 03:05:43 GMT

From: ogicse!emory!europa.eng.gtefsd.com!howland.reston.ans.net!spool.mu.edu!

umn.edu!news@network.ucsd.edu

Subject: Setting up a HY-GAIN vertical.

To: ham-ant@ucsd.edu

On 2 Dec 93 14:26:00 GMT, Jim Hefferon wrote:

>Hello,

>I'm a Novice. I got an antenna as part of a package (along with a >tranciever, etc.) that has no documentation. I was wondering if some >kind soul could give me some hints as to how to proceed. I'm specifically

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>worried about length to which the sections should be telescoped, but
>I'm grateful for any pointers.
 I tried telephone information
> |
      LINCOLN NEBR. U.S.A.
                                          in Lincoln, but they said
                                          HY-GAIN has not been listed
                  57010 HY-GAIN 1989
> | |
                                          for a long time, and QST
>Thanks, Jim KB2HEO.
>Jim Hefferon
                   Math, St.~Michael's College, Colchester VT, USA 05439
>internet: hefferon@smcvax.smcvt.edu
                                                      (802) 654-2677
Jim;
Contact Telex/Hy-Gain
9600 Aldrich Av. S
Minneapolis, MN 55420
612 887-5530
Dave Quick WD0EKL
Reply to quick007@maroon.tc.umn.edu
Packet Radio: WD0EKL@WB0GDB.#STP.MN.USA
Date: Mon, 6 Dec 1993 18:47:31 GMT
From: nih-csl!helix.nih.gov!mack@uunet.uu.net
Subject: Yagi question
To: ham-ant@ucsd.edu
In article <2dtmgm$25v5@mtecv2.mty.itesm.mx> al176817@openlab100.mty.itesm.mx
(SHERROD MUNDAY) writes:
>I've got a question about a yagi antenna: I built a 460 MHz 6-element yagi
>antenna using the Yagimax program, and it seems to work fairly well.
>Directionality and gain were very close (well, relatively close, since it's my
>first attempt at building an antenna) to the theoretical results.
>Now my question: I understand the elements of the Yagi are supposed to act as
>dipoles of verying electrical lengths, and when properly spaced, will direct the
>signal and add gain. So if the elements are supposed to act like dipoles, and a
>dipole can be simulated with a monopole on a ground plane, what happens if I take
>the bottom half of the antenna and replace it with a large ground plane? (let me
>try to draw something here...)
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                 >
>
>I'm using a gamma match on the DE, if that makes any difference.
>The reason I am wondering about this is I was thinking about the crazy
>possibility of mounting this 1/2 of a dipole on the roof of a car, etc.
>for getting some sort of DF while still being able to listen to the signal
>(since I only have one radio).
>This way I wouldn't have to worry about the effects of a complete yagi being
>mounted so close to a large metal surface (the roof of the car) which would act
>as a ground plane and mess up the radiation patterns...
>
>Can anyone tell me if there's a way to simulate this sort of problem using
>something like mininec or any other programs on the net? If anyone else could
>run a simulation on a more powerful computer than mine (286, 10Mhz, 1M ram, DOS)
>with a better program and post some results, that would be great...
>Thanks.
>Sherrod Munday-
                Temporarily displaced to Mexico for a semester.
                might start functioning normally after return to the
>
                States THIS WEEK!!!.. E-mail until then, in spite of
                what the header might say:
                                          al176817@academ01.mty.itesm.mx
>
                After that, mail should be sent to smunday@mail.vt.edu or
>
                sherrod_munday@launchpad.unc.edu, and will be responded to
>
                upon my return to a place from which I can get to Internet.
>
Date: 2 Dec 1993 22:49:13 GMT
From: swrinde!sdd.hp.com!hpscit.sc.hp.com!rkarlqu@network.ucsd.edu
To: ham-ant@ucsd.edu
References <CH0EAy.5I7@srgenprp.sr.hp.com>,
<1993Dec3.001439.1@dstos3.dsto.gov.au>, <CHF5oI.9Ly@ncifcrf.gov>
Subject : Re: helical antennas
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In article <CHF5oI.9Ly@ncifcrf.gov>, Joe Mack <mack@fcs260c.ncifcrf.gov> wrote:

>I've talked about making linear polarized beams from two helices with another >ham and we've both reached the same and rather discomforting conclusion >that the power that is in the direction which is not radiated in the forward >direction is instead radiated in weird side lobes. The thinking goes like this->replace the helix by two cross yagis (or dipoles for the sake of the arguement) >fed 90 etc to get circular polarised radiation. Next put two of these >next to each other in oppisite sense. Now consider tha case where the >two sets of antennas are far enough apart that they are not in each >other's near field, ie they are independent radiattoors. Say the hoirizontal >dipoles are in phase and the vertical ones are 180 out of phase (ie >so we get horz radiation). Being orthogonal the H and V beams can be >considered indepenently . The horizonatal ones add. Averyone agrees on that. >In the forward direction the vertical diploes cancel so that we get no >vertical polarised radiation int eh forward direction. EVeryone agrees on >that too. However in some direction off to the side thaey will add , giving >all the power in side lobes for vertical radioation. In the case when >the radiators in in each other's near field , then mutual impedances etdc will make the

>whole thing too compicated for me to even think about.

- > Anyone know if this is right.?
- > Joe NA3T
- > mack@ncifcrf.gov

Your reasoning would be correct at sufficiently large spacings, but for reasonable spacings, by the time the angle gets large enough to make the vertical beams add instead of cancel, the gain of the vertical beams should be less than a dipole. So the combination of the two will make the side lobes that are there anyway a little worse. I guess the issue is how big a deal is sidelobe suppression anyway; I would say for ham radio (as opposed to say radar) it is not a big deal. [Disclaimer: I've never built this antenna, so this is just my opinion of the theory]
